

Boelter Associates

CONSULTING ENGINEERS AND SCIENTISTS

CURRICULUM VITAE - June 2007

FREDERICK WILLIAM BOELTER, CIH, PE

Certified in Comprehensive Practice of Industrial Hygiene, ABIH, #1856
Registered Professional Engineer, State of Illinois, #062-042203
Qualified Environmental Professional, IPEP, #06930008 (Inactive)
Diplomat of the American Academy of Environmental Engineers #93-20012 (Inactive)
Illinois AHERA Accreditation #00111-C004, M004, D004
Florida Consultants License #IA0000038 (Inactive)

EDUCATION:

Bachelor of Science - Environmental Engineering
Purdue University, West Lafayette, Indiana
June 1973

PROFESSIONAL EXPERIENCE:

December 1985 Principal Consultant
to Present Boelter Associates, Inc.
Park Ridge, Illinois

Responsibilities include overall guidance of the firm's technical and consulting services. Other activities include team leader and project level consulting on environmental (air, water and soil) and occupational health issues; designing and implementing engineering and administrative changes; conducting investigations and control techniques research; analyzing and assessing risk and advising in HSE management; investigating physical structure and building technologies and designing mitigation methods. The firm operated as Boelter Associates, Inc. (d/b/a Boelter Environmental Consultants) until March of 1997 after which it operated as Boelter & Yates, Inc. through December of 2006.

February 1988 President
to September 1992 Stat Analysis Corporation
Chicago, Illinois

Responsibilities include administrative management of the firm's analytical services. Capabilities included light and electron microscopy, atomic absorption, and ion chromatography. Other activities include management of the quality control requirements. AIHA Accredited Lab #337 and NVLAP Accredited Lab #1202 (formerly AHERA Lab #5137).

December 1985 President
to January 1987 The Asbestos Group, Inc.
Chicago, Illinois

Responsibilities include the overall management and development of the firm's environmental, architectural and analytical services. Other activities include consulting on asbestos related issues and projects.

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March 1983 Director, Environmental Services
to December 1985 Carnow, Conibear & Associates, Ltd.
Chicago, Illinois

Responsibilities included the overall management of industrial hygiene, environmental and engineering programs; supervision of professional staff; consulting on engineering controls, pollution, and industrial hygiene; conducting research, i.e., epidemiologic studies related to integrating industrial hygiene and medical surveillance; and designing and implementing occupational and public health programs.

August 1980 Senior Industrial Hygiene Engineer
to March 1983 NATLSCO
Long Grove, Illinois

Responsibilities included consulting with clients on issues of industrial hygiene and engineering controls, organizing and leading teams on specific projects domestically and internationally, and instructing courses in Industrial Hygiene and Industrial Ventilation.

January 1978 Industrial Hygiene Engineer
to August 1980 Occupational Safety & Health Administration
Regional Office of Technical Support

Responsibilities included consulting with OSHA, industry and attorneys on the feasibility of controlling air contaminants, biological and physical agents, and serving as an expert witness in ventilation and acoustics.

June 1976 Compliance Officer
to January 1978 Occupational Safety & Health Administration
Milwaukee Area Office

Responsibilities included conducting general schedule inspections and compliant inspections of facilities. Other duties included temporary assignments to the Regional and National Office.

May 1973 Consulting Project Engineer
to June 1976 Envirex, Inc.
Milwaukee, Wisconsin

Responsibilities included consulting with industry to identify and eliminate workplace and environmental health hazards through ventilation and air pollution controls. Conducted pilot scale studies of air pollution control equipment in heavy industry. Conducted stack testing in the utility and other heavy industry.

CONTINUING EDUCATION:

"Aerosol Sampling for Micron and Nano Sized Bioaerosols" AIHce, Philadelphia, PA, June 2007

"Environmental Health and Safety in the European Union" AIHce, Philadelphia, PA, June 2007

"Facility Commissioning", ASHRAE, Chicago, IL, March 2007

"Advanced Techniques in Probabilistic Analysis" Decisioneering, Chicago, Illinois, December 2006

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"Auditing Health and Safety Management Systems" PCIH, San Jose, California, September 2006

"Particles and Health: Environmental Forensic Analysis" PCIH, San Jose, California, September 2006

"Practical Tools for Dealing with Fears of Radiation and Nuclear Terrorism" AIHA Conference, Chicago, Illinois, May 2006

"IH Data Analysis, Bayesian Decision Analysis, and Censored Data Analysis" Exposure Assessment Solutions, Inc., Chicago, Illinois, February 2006.

"Nanotechnology – Emerging Issues for the Health and Safety Profession" AIHA Seminar, Chicago, Illinois, February 2006.

"Why Buildings Fail and the Effect on Indoor Air Quality" PCIH, Denver, Colorado, October 2005.

"Welding Health and Safety" PCIH, Denver, Colorado, October 2005.

"Exposure Assessment Decision Making: Making Decisions in the Face of Uncertainty" AIHA Symposium, Denver, Colorado, October 2005.

"Health Effects of Welding", WVU School of Medicine, National Institute of Environmental Sciences (NIEHS), Association of Occupational and Environmental Clinics (AOEC), Morgantown, West Virginia, July 2005.

"Critical Issues in Monitoring Asbestos: The 1% Rule, Definitions, Settled Dust, Analysis of Fibrous Talc, and Other Monitoring Applications," ASTM Committee D-22 Symposium, University of Vermont, Burlington, Vermont, July 2005.

"Occupational Epidemiology" AIHA Conference, Anaheim, California, May 2005.

"Emerging Issues Forum: Nanotechnology", AIHA Teleconference, April 2004.

"Advanced Topics in Exposure Assessment," American Industrial Hygiene Association, Rancho Mirage, California, September 2003.

"Industrial Hygiene Metrics," AIHA Conference, Dallas, Texas, May 2003.

"Case Studies of Subsurface Vapor Intrusions into Buildings," Environmental Institute for Continuing Education, Ontario, Canada Internet Conference, January 2003.

"A Review of Asbestos Monitoring Methods and Results for the World Trade Center, Libby Vermiculite and Fibrous Talc," ASTM Committee D-22 Symposium, Johnson State College, Johnson, Vermont, July 2002.

"Isocyanates: Current Issues in Toxicology, Occupational Medicine, Industrial Hygiene, and Regulation," AIHA Conference, San Diego, California, June 2002.

"Risk Assessment for the Industrial Hygienist," AIHA Conference, News Orleans, Louisiana, June 2001.

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"Chemical Accident Prevention & Risk Management Planning," LM-A&WMA Conference, Chicago, Illinois, April 2, 1998.

"Strategies and Tools for Successful EMS," LM-A&WMA Conference, Deerfield, Illinois, March 1998.

"USEPA Multimedia Enforcement & Industry Response," LM-A&WMA Conference, Chicago, Illinois, February 1998.

"Risk-Based Closures," LM-A&WMA Conference, Chicago, Illinois, November 1997.

"Ozone and PM_{2.5} Standards," USEPA Conference, Chicago, Illinois, December 1996.

"Preparing for Compliance with Your MACT Standards," A&WMA Conference, Nashville, Tennessee, June 1996.

"Elements of a Product Stewardship Program," AIHA Conference, Washington, DC, May 1996.

"TACO, RBCA, RELPEs, and Brownfields," LM-A&WMA Conference, Oak Brook, Illinois, February 1996.

"Continuous Emission Monitoring," A&WMA Conference, Chicago, Illinois, October 1995.

"Information Management for Compliance," LM-A&WMA Conference, Argonne National Laboratory, December 1994.

"Risk Communication," Leonard Roller Workshop, Rosemont, Illinois, October 1994.

"Innovative Technology Monographs," American Academy of Environmental Engineers, Arlington Heights, Illinois, September 1994.

"Hazardous Waste: The RCRA Regulations," American Industrial Hygiene Conference Professional Development Course, Anaheim, California, May 1994.

"Resolving the IAQ Ambiguities," American Industrial Hygiene Symposium, Anaheim, California, May 1994.

"Strategic Assessment of Cleanup Alternatives," PHB/BFS Seminar, Washington, DC, April, 1994.

"Asbestos Research Symposium," HEI-AR, Boston, Massachusetts, March 1993.

"RCRA Update: Using the CAMU," LM-A&WMA Conference, Chicago, Illinois, February 1993.

"Risk Assessment for Soil Contamination," University of Wisconsin Extension, Milwaukee, Wisconsin, May 1992.

"In-situ Soil Remediation Techniques for Petroleum Products and Other Hazardous Waste," University of Wisconsin Extension, Denver, Colorado, April 1992.

"Pathway Analysis and Risk Assessment," Radiological Assessment Corporation, Kiawah Island, South Carolina, March 1992.

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"Biological Monitoring for Detection and Quantification of Chemical Exposures," American Industrial Hygiene Conference Professional Development Course, May 1991.

"Retrospective Epidemiology," National Cancer Institute, Leesburg, Virginia, March 1990.

"Asbestos Measurement Research and Laboratory Accreditation," ASTM Committee D-22 Symposium, Johnson State College, Johnson, Vermont, July 1988.

"Occupational Cohort Studies," American Industrial Hygiene Conference Professional Development Course, May 1988.

"Principals and Practices of Asbestos Abatement," University of Illinois, MAIC, Chicago, Illinois, March 1988.

"AHERA Building Inspection and Management Planning," University of Illinois, MAIC, Chicago, Illinois, March 1988.

"Indoor Air Quality," Air Pollution Control Association, Chicago, Illinois, November 1985.

"The Indoor Environment," American Institute of Architects, Chicago, Illinois, October 1985.

"Indoor Pollution - The Architect's Response," American Institute of Architects, San Francisco, California, November 1984.

"Hazardous Spill Cleanup," The Center for Professional Advancement, Chicago, Illinois, June 1984.

"Groundwater Compliance: Designing, Installing and Operating Groundwater Wells," Center for Energy and Environmental Management, Chicago, Illinois, September 1983.

"Industrial Ventilation," Michigan State University, East Lansing, Michigan, February 1980.

"Recognition, Evaluation and Control of Noise Hazards," OSHA Training Institute, Des Plaines, Illinois, September 1978.

"Respirator Training," OSHA Training Institute, Des Plaines, Illinois, June 1978.

"Radiation Safety," Northwestern University, Evanston, Illinois, June 1978.

"Energy Management for Manufacturing Plants," University of Wisconsin, Madison, Wisconsin, November 1977.

"Hazardous Materials and Compressed Gases," OSHA Training Institute, Des Plaines, Illinois, September 1977.

"Principles and Practices and Industrial Toxicology," Wayne State University, Detroit, Michigan, June 1977.

TEACHING, SPEECHES, PAPERS

June 2007

"Correlating Welding Arc Time and Field Derived Generation Rates",
American Industrial Hygiene Association, Philadelphia, PA.

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June 2007	"Communicating Risk/Communicating Cause", American Industrial Hygiene Association, Philadelphia, PA.
June 2007	"Welding Fume Exposure Prediction based on Laboratory vs. Field Based Generation Rates", American Industrial Hygiene Association, Philadelphia, PA.
June 2007	"Reconstructing Exposure and Dose", American Industrial Hygiene Association, Professional Development Course, Philadelphia, PA.
March 2007	"Exposure Assessment and Application of a Two-Zone Model for Shielded Metal Arc Welding," Society of Environmental Toxicology and Chemistry (SETAC) and Society for Risk Analysis (SRA), Argonne National Lab, Argonne, IL.
September 2006	"Exposure Reconstruction," PCIH Workshop, San Jose, California.
May 2006	"Judging Industrial Hygiene Science – A Daubert Hearing on Dose Reconstruction," American Industrial Hygiene Association, Chicago, IL.
May 2006	"A Multi-Application, Multi-Industry Asbestos Exposure Assessment During Maintenance of Surfaces and Joints Sealed With Gaskets and Packing," American Industrial Hygiene Association, Chicago, IL.
May 2006	"A Series of Negative Exposure Assessments Related to Asbestos Containing Components Still Used in Railroad Equipment Today," American Industrial Hygiene Association, Chicago, IL.
May 2006	"Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist," American Industrial Hygiene Association, Professional Development Course, Chicago, IL.
November 2005	"Welding Exposure Assessments," AIHA/ASSE Welding Symposium, Harper College, Palatine, IL.
May 2005	"Building Shrinkage and Microbial Damage: Plumbing Failures and Water Infiltration from Joint Failures," Co-Presenter, AIHA Conference, Anaheim, CA
May 2005	"Examining a Silica Exposure Claim in the Court Room: Tough Questions for the Industrial Hygienist," Session Arranger, AIHA Conference, Anaheim, CA
May 2005	"Comparison of Short-Term Sample Data with Corresponding Long-Term Results: STEL Data Over Predicts an 8-hr TWA," Co-Presenter, AIHA Conference, Anaheim, CA
May 2005	"Verification of Respirable Silica Containment of Large Process Equipment Through the Use of SF6 Tracer Gas," AIHA Conference, Anaheim, CA
May 2005	"Airborne Asbestos Fiber Exposure Assessment of Heavy Equipment Mechanics," AIHA Conference, Anaheim, CA

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May 2005	"Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist," American Industrial Hygiene Association, Professional Development Course, Anaheim, CA.
February 2005	"Estimating Historical Exposures and Dose," AIHA Chicago Section Meeting, LaGrange, Illinois.
June 2004	"The Appropriateness of Applying OSHA Standards to Vapor Intrusion Exposures in Occupational Settings," AWMA Conference, Indianapolis, Indiana
May 2004	"Dose Reconstruction in the Court Room: A Tool to Assess the Significance of Exposure," Session Arranger, AIHA Conference, Atlanta, Georgia
May 2004	"Untangling Asbestos Exposure: Strategies, Protocols, Methods, and Statistics," Session Arranger, AIHA Conference, Atlanta, Georgia
May 2004	"Are the OSHA Standards Appropriate for Assessing the Vapor Intrusion Pathway in Occupational Settings," AIHA Conference, Atlanta, Georgia
May 2004	"Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist," American Industrial Hygiene Association, Professional Development Course.
May 2004	"Validation of the Ventilation Model and its Usefulness When Applied to Estimating Exposures to Airborne Aerosols," AIHA Conference, Atlanta, Georgia
February 2004	"Retrospective Exposure Assessment Strategies and Dose Reconstruction," AIHA Chicago Section Conference entitled Exposure Assessment Strategies and Modeling - Past, Present and Future, Harper College, Palatine, Illinois.
May 2003	"Importance of the Inhalation Exposure Pathway When Evaluating the Risk of Subsurface Vapor Intrusion into Indoor Environments," AIHA Conference, Dallas, Texas.
May 2003	"Correlations in General Array Between Complaint and Non-complaint Areas of an Occupied Office," AIHA Conference, Dallas, Texas.
May 2003	"Estimating Past Exposures: The Scientific Basis for Reconstructing Asbestos Dose for Groups and Individuals," AIHA Conference, Dallas, Texas.
May 2003	"Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist," American Industrial Hygiene Association, Professional Development Course.
September 2002	"Applications of Risk Assessment - Inhalation Exposure Pathway" Risk Assessment Symposium, American Industrial Hygiene Association, Cincinnati, Ohio.

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- June 2002 "Managing Uncertainties Associated with Post-Acquisition Remediation Agreements," Air & Waste Management Association, Baltimore, Maryland.
- June 2002 "Asbestos Exposure Dose Reconstructions," American Industrial Hygiene Conference & Exposition, San Diego, California.
- June 2002 "Measuring the Same Atmosphere with Short-Term and Long-Term Fiber Samples: It's Implication for Assessing TWA Exposures," American Industrial Hygiene Conference & Exposition, San Diego, California.
- June 2002 "Is it the Vapor Barrier, the Insulation, the Construction Techniques, or the Moisture Source Which Exacerbates a Mold Problem," American Industrial Hygiene Conference & Exposition, San Diego, California.
- June 2002 "Challenges in Designing a Ventilation System for Upset Conditions," American Industrial Hygiene Conference & Exposition, San Diego, California.
- June 2001 "Validation of Statistical Sampling in Projecting Environmental Costs and Liabilities in a Real Estate Transaction," Air & Waste Management Association, Orlando, Florida.
- June 2001 "Three Cases of Serious Mold Contamination Which Were Not Apparent Through Visible Evaluation but Were Detected by Air Sampling," American Industrial Hygiene Conference & Exposition, New Orleans, Louisiana.
- June 2001 "Fiber Release Rates and Exposure Assessment During the Removal of Windows Glazed with Asbestos-Containing Putty," American Industrial Hygiene Conference & Exposition, New Orleans, Louisiana.
- June 2001 "Controlling the Airborne Concentrations of Nitrosamines Through Improved Process Control and Ventilation at a Rubber Products Company," American Industrial Hygiene Conference & Exposition, New Orleans, Louisiana.
- June 2001 "Applying Dose Reconstruction to Historical Asbestos Exposure," American Industrial Hygiene Conference & Exposition, New Orleans, Louisiana.
- June 1999 "Mansard-Style Roof Parapets Create Turbulence and Airflow Restrictions Which Can Allow Contaminant Reentry," American Industrial Hygiene Conference & Exposition, Toronto, Canada.
- June 1999 "Ventilation Changes Which Resolved IAQ, Energy, and Operational Difficulties in a Printing Facility," American Industrial Hygiene Conference & Exposition, Toronto, Canada.
- December 1998 "Design and Construction Tactics under TACO and Projected Costs," Air & Waste Management Association, Chicago, Illinois.
- June 1998 "Update on Risk-Based Corrective Action Approaches," American Bar Association Environmental Subcommittee Meeting, Chicago, Illinois.

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- May 1998 "Fiber Release Rates from Asbestos-Containing Gaskets and Packings Found in Intact Industrial and Maritime Fittings," American Industrial Hygiene Conference & Exposition, Atlanta, Georgia.
- June 1997 "Four Different Techniques for Projecting Costs of Environmental Liabilities: Preliminary Range, Comparison of Competing Alternatives, Task Analysis for a Specific Objective, and Probabilistic Analysis of Alternatives," Air & Waste Management Conference, Toronto, Ontario, Canada.
- June 1997 "Using Risk-Based Cleanup Objectives as a Basis to Assess Financial Risk and Negotiate a Real Property Transfer at a Former Industrial Site with DNAPL Contaminated Soils and Groundwater," Air & Waste Management Conference, Toronto, Ontario, Canada.
- May 1997 "Conflicts in Laboratory Ventilation Systems: Similarities in the Upgrade Needs of Three Laboratories," American Industrial Hygiene Conference & Exposition, Dallas, Texas.
- May 1997 "Historical Exposure Assessments: Creating and Testing a 30-Year Old, Discontinued Product," American Industrial Hygiene Conference & Exposition, Dallas, Texas.
- March 1997 "Brownfields Redevelopment," Air & Waste Management Association, Chicago, Illinois.
- March 1997 "Environmental Issues in High Rise Buildings," CCHRB, Chicago, Illinois
- March 1997 "Managing an Environmental Crisis," ABA Toxic & Hazardous Substances and Environmental Law Committee Meeting, Phoenix, Arizona.
- February 1997 "Contaminated Site Remediation," Air & Waste Management Association, Chicago, Illinois.
- November 1996 "Cost Allocation & Analysis of Environmental Compliance," Chicago Bar Association, Chicagoland Chamber of Commerce, Air & Waste Management Association, Chicago, Illinois.
- June 1996 "Evaluation of Chlorinated Solvents in Groundwater: Remediation Cost Allocation and Redevelopment of an Industrial Site," A&WMA Conference, Nashville, Tennessee.
- March 1996 "Update on ISO 14000 and Risk Based Property Transfers," National Association of Real Estate Investment Managers Symposium, Dallas, Texas.
- January 1995 "Clean Air Act Amendments - Maximizing Flexibility in Federal Operating Permits," ASHRAE Conference, Chicago, Illinois.
- November 1994 "Operating Ventilation Systems," Navistar/UAW Conference, Indianapolis, Indiana.

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September 1994	"SEC Disclosure Rules: Using Alternative Engineering Costs," LM-A&WMA, Chicago, Illinois
March 1994	"RCRA Update: SACM EE/CA and NCP RI/FS Processes," Conference Chair LM-A&WMA, Chicago, Illinois
November 1993	"Enforcement Trends Conference," Co-Chair LM-A&WMA, Chicago, Illinois.
October 1993, September 1993	"Applying Science to Environmental Solutions - Applying Innovative Technologies," EEI Seminar, Washington, DC and Chicago, Illinois.
April 1993	"Update on Environmental Issues," Three Rivers Manufacturers' Association, Joliet, Illinois.
January 1993	"Clean Air Act Amendments - Title V: Permitting," ASHRAE Conference, Chicago, Illinois.
November 1992	"Developing a Corporate Environmental Policy," American Institute of Architects - Chicago Chapter, Chicago, Illinois.
November 1992	"Construction Contracts and Specifications," University of Wisconsin, College of Engineering, Madison, Wisconsin.
October 1992	"Indoor Air Quality by Design - Case Studies," Chicago Committee on High Rise Buildings, Chicago, Illinois.
September 1992	"Design Considerations for Safety and Hazardous Conditions in Laboratories," University of Wisconsin, College of Engineering, Novi, Michigan.
April 1992	"Case Studies in Evaluating Remediation Alternatives and Assessing Financial Risk," National Association of Real Estate Investment Managers Symposium, Milwaukee, Wisconsin.
January 1992	"Environmental Engineering in the Former USSR," Air & Waste Management Association Conference, Chicago, Illinois.
January 1991	"Current and Future Environmental Responsibilities," Office of Real Estate Research, University of Illinois, Hyatt Hotel, Oak Brook, Illinois.
December 1991	"Visibility Underground," Jenkins & Gilchrist Seminar, Dallas, Texas.
November 1991	"Construction Contracts and Specifications," University of Wisconsin, College of Engineering, Madison, Wisconsin.
January 1991	"Environmental Update: OSHA, AHERA and NESHAP," Chicago Bar Association, Chicago, Illinois.
November 1990	"Indoor Air Evaluations," International Council of Shopping Centers, Fort Lauderdale, Florida.

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November 1990	"Environmental Considerations in Real Estate Management," Institute of Real Estate Management, New Orleans, Louisiana.
September 1990	"Indoor Environmental Problems and Solutions," Illinois Facility Managers Association, Chicago, Illinois.
June 1990	"Industrial Hygiene Considerations during Auditing," Amoco Corporation, Westmont, Illinois.
April 1990	"Advanced Commercial Loan Documentation," Illinois Bankers Association, Urbana and Arlington Heights, Illinois.
February 1990	"Commercial Loan Workouts," Mortgage Bankers Association, National Conference, Orlando, Florida.
February 1990	"Environmental Audit Trends in the Lending Community," Mortgage Bankers Association, National Conference, San Diego, California.
January 1990	"Current and Future Environmental Responsibilities," Office of Real Estate Research, University of Illinois, Hyatt Hotel, Oak Brook, Illinois.
August 1989	"Indoor Air Quality Problems and Phased Investigations," BOMA Chicago, Marriott Hotel, Chicago, Illinois.
May 1989	"Investing in Properties with Environmental Risks," The Institute for Professional and Executive Development, Inc., Washington, D.C.
April 1989	"Contaminated Real Estate; Keeping the Deal Alive," Midland Hotel, Chicago, Illinois.
April 1989	"Commercial Real Estate Construction Loan Disbursement," Executive Enterprises, Chicago, Illinois.
March 1989	"Quantifying Environmental Risks," Mortgage Servicing Workshop, National Council of Savings Institutions, Philadelphia, Pennsylvania.
February 1989	"Environmental Audits Case Studies," National Income Properties Conference, MBA Conference, Orlando, Florida.
November 1988	"Commercial Real Estate Construction Loan Disbursement," Executive Enterprises, Chicago, Illinois.
October 1988	"Environmental Liability - Limiting the Lender's Exposure," Hyatt Regency, Chicago, Illinois.
September 1988	"Environmental Audits - A Phased Approach," National Association of Savings Institutions, Washington, D.C.
August 1988, July 1988	"Transmission Electron Microscopy; A Consumer's Guide," University of Illinois, MAIC, Chicago, Illinois.

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June 1988	"Indoor Air Quality - Case Studies," BOMA International, Cincinnati, Ohio.
June 1988	"Environmental Audits," University of Chicago, Chicago, Illinois.
March 1988,	"Economic Consequences of ACM in Buildings," BOMA International Symposium, Chicago, San Francisco, New York, Sacramento, Toronto.
November 1987	"Developing an Operations and Maintenance Program," HEP Seminar, Chicago, Illinois
November 1987	"AHERA Compliance," Center for Energy and Environmental Management, Washington, DC.
October 1987	"Evaluating the Indoor Environment: Occupational Techniques in a Non-Occupational Environment," AIHA TN-Valley Section Conference, Knoxville, Tennessee.
September 1987	"Environmental Liabilities in Real Estate Transactions," New York University, New York, New York.
June 1987	"Asbestos Recognition and Management," AWCI, Chicago, Illinois.
June 1987	"Correlating PCM and TEM Data - A Statistical Comparison," AIHA Conference, Montreal, Canada.
June 1987	"Contaminant Migration via Stack Effect in High Rise Buildings," AIHA Conference, Montreal, Canada.
June 1987	"Particulate in Operating Room Air and Nosocomial Infection Rates," AIHA Conference, Montreal, Canada.
May 1987	"Indoor Air Quality," CSI/AIA Seminar, Chicago, Illinois.
March 1987	"Stack Effect in High Rise Buildings," ASHRAE Conference, Washington, DC.
March 1987	"Community Right-to-Know Programs," American Society of Safety Engineers, Rockford, Illinois.
January 1987	"Economic Consequences of ACM in Buildings," BOMA International Symposium, Chicago, San Francisco, New York, Sacramento, Toronto.
February 1987	"Implementing ACM Management Programs," AIHA Sectional Meeting, Knoxville, Tennessee.
January 1987	"Industrial Hygiene Programs," Self Insurers Service, Phoenix, Arizona.
January 1987	"Operation and Maintenance Programs: An Alternative to Removal?" National Asbestos Council, Chicago, Illinois.

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January 1987	"OSHA Regulations, Air Sampling Techniques, and Laboratory Qualifications," AWCI World Congress, Washington, DC.
November 1986	"Developing and Administering Right-to Know Programs," Health Care Material Management Society, Elmhurst, Illinois.
November 1986	"Asbestos Inspection and Abatement Options," Illinois Environmental Health Association, Springfield, Illinois.
September 1986	"AIHA Inter-Committee Report on Asbestos," National Asbestos Council, New Orleans, Louisiana.
February 1986	"Asbestos Evaluation and Management," AIHA Sectional Seminar, Chicago, Illinois.
1986 and 1987	"Identifying Asbestos Hazards and Preparing Contract Documents," MAIC, Chicago, Illinois.
September and August 1985	"Asbestos Abatement," Veterans Administration, Engineering Training Center, North Little Rock, Arkansas
December and July 1985	"Hazardous Waste Sites: Respiratory and Other Protective Equipment," Clean Sites, Alexandria, Virginia
January 1985	"Asbestos Rules and Regulations," Illinois Institute of Technology, Chicago, Illinois.
December 1984	"Asbestos Hazards and Abatement Techniques," Veterans Administration, Minneapolis, Minnesota
Annually May 1983 thru 1991	"Evaluating and Troubleshooting Exhaust Ventilation Systems," American Industrial Hygiene Association, Professional Development Course
February 1982	"Controlling Metal Fumes," AWS Midwest District, Milwaukee, Wisconsin
1980 to 1983	"Fundamentals of Industrial Ventilation," National Loss Control Service Corporation, Long Grove, Illinois.
January to May 1979 and 1980	"Introduction to Industrial Hygiene," Joliet Junior College, Joliet, Illinois.
March 1977	"Worker Exposures and Engineering Controls," AFS Wisconsin Chapter, Milwaukee, Wisconsin
January 1977	"Assessment Strategies for Chemical Exposures," AIChE Milwaukee Section, Milwaukee, Wisconsin

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PUBLICATIONS:

"Heavy Equipment Maintenance Exposure Assessment: Using a Time-Activity Model to Estimate Surrogate Values for Replacement of Missing Data," Journal of Occupational and Environmental Hygiene, Volume 4, Issue 7, July 2007, pages 525-537

Author's reply to "Asbestos Exposure from Gasket Removal" Letter to the Editor, AIHA Journal, Volume 64, Number 5, September/October 2003, pages 595-597

"Airborne Fiber Exposure Assessment of Dry Asbestos-Containing Gaskets and Packings Found in Intact Industrial and Maritime Fittings," AIHA Journal, Volume 63, Number 6, November 2002, pages 732-740

"Lenders Emphasizing Environmental Audits," Asbestos Issues (ISSN #0897-1501), Vol. 3 No. 4, April 1990

"Air Sampling and Monitoring," Asbestos Issues (ISSN #0897-1501), Vol. 2 No. 3, March 1989

AWARDS:

2005 Recipient: Edward J. Baier Technical Achievement Award, American Industrial Hygiene Association

2005 Recipient: Fellow Award, American Industrial Hygiene Association

2004 Best Quantitative Risk Assessment, American Industrial Hygiene Association

PEER REVIEWER:

National Institute for Occupational Safety and Health

- * 1986 Peer Review Panel on Respiratory Protection for Asbestos Fibers

U.S. Environmental Protection Agency - Risk Reduction Engineering Laboratory

- * 1988 Peer Review Panel on Asbestos Issues

Manuscript reviewer

- * Journal of Environmental Analysis and Environmental Engineering
- * Journal of Occupational and Environmental Hygiene

PROFESSIONAL AFFILIATIONS:

- * Air & Waste Management Association (AWMA)
- * American Academy of Environmental Engineers (AAEE)
- * American Academy of Industrial Hygiene (AAIH)
- * American Conference of Governmental Industrial Hygienists (ACGIH)
- * American Industrial Hygiene Association (AIHA)
- * American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- * American Society of Testing Materials (ASTM)
- * Association of Engineering Firms Practicing in the Geosciences (ASFE)
- * Building Owners & Managers Association (BOMA)
- * Environmental Information Association (EIA) [formerly National Asbestos Council (NAC)]

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- * Institute for Professional Environmental Practice (IPEP)
- * Mortgage Bankers Association (MBA)
- * RBCA Leadership Council
- * Society for Risk Analysis (SRA)

COMMITTEE AND BOARD MEMBERSHIPS:

Air & Waste Management Association (A&WMA) (Lake Michigan Section)

- * Board of Directors - 1992 to 1997
- * Treasurer - 1993 to 1995
- * Vice Chair - 1995 to 1996
- * Chair - 1996 to 1997

American Industrial Hygiene Association (Chicago Section)

- * Board of Directors - 1984 to 1986

American Industrial Hygiene Association (National)

- * Engineering Committee - Member 1983 to 1988 - Chair 1986 to 1987
- * Exposure Assessment Committee - Member 2001 to present
- * Hazardous Waste Committee - Member 1983 to 1987
- * Indoor Environmental Quality Committee - Member 1986 to 1988 and 2000 to present
- * Intercommittee Asbestos Task Force - Co-Chair 1985 to 1986
- * Laboratory H&S Committee - Member 1996 to 1999
- * Risk Assessment Committee - Member 2001 to present

American Institute of Architects (National)

- * Environmental Committee

American Society of Heating, Refrigerating, and Air-Conditioning Engineers

- * Environmental Committee
- * ISO/TC 205 Building Environment Design

American Society of Testing Materials

- * D-22.05 Committee on Indoor Contaminants

Building Owners and Managers Association (National)

- * Indoor Air Quality Committee

City of Chicago - Office of the Building Commissioner

- * Mechanical Codes Committee - Member 1998 to 2003

Mortgage Bankers Association (MBA)

- * Executive Committee on Environmental Matters

Environmental Information Association (EIA)

[formerly National Asbestos Council (NAC)]

- * Past Chair - Surface Sampling Committee

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

JAMES DIRECTOR and SUSAN DIRECTOR,

Plaintiff(s)

-v-

ALGOMA DOOR, INC., et al.

Defendants.

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Index No. 115923-06

DEFENDANT T H AGRICULTURE & NUTRITION, L.L.C.'S

WITNESS AND EXHIBIT LIST

Defendant T H Agriculture & Nutrition, L.L.C. ("THAN") submits this Trial Witness and Exhibit List, while reserving its right to supplement, amend and/or modify this list, as follows:

WITNESS LIST

T H Agriculture & Nutrition, L.L.C. ("THAN") designates the following fact and/or expert witnesses whom it reasonably anticipates may testify, live or by prior deposition, according to availability, in accordance with applicable rules and orders of Court, but prior to the conclusion of discovery and without having received from plaintiffs all materials necessary to prepare its defense. Accordingly, THAN reserves the right to supplement these disclosures as necessary, among other things to include conclusions and opinions of its experts regarding the specific facts and circumstances of this case, plaintiff James Director's ("the Plaintiff") physical and medical condition, and other case-specific issues. THAN also reserves the right to have any of its experts review and render opinions regarding any opinions or conclusions that may be expressed by plaintiffs' experts or other witnesses as well as call any of the witnesses listed by

any other party in this action. By listing or referring to any witness, this defendant does not thereby admit admissibility, validity or content.

1. Any custodian of records for any and all named defendants and third-party defendants to authenticate any and all records or documents which may be used in these cases;
2. Any expert or physician listed by the plaintiffs, any defendant, or dismissed defendant, who is expected to testify about asbestos-related disease, including any such expert who has reviewed x-rays or issued a report on the medical condition of the plaintiff in this case;
3. Any expert witness designated by the plaintiffs, defendant or any dismissed defendant, including the statement of subject matter, opinion and grounds of that witness;
4. Any treating, diagnosing physician, or other healthcare provider of the Plaintiff;
5. Any witnesses listed or called by the plaintiffs, or any other party, including any dismissed parties;
6. Any representatives of any of the Plaintiff's employers or companies on whose premises the Plaintiff worked;
7. Any and all personnel referenced in the Plaintiff's employment records;
8. Any co-workers, employers, supervisors, foremen or superiors of the Plaintiff;
9. Any person replacing the job position held by any witness;
10. Representatives and/or records custodians of the Plaintiff's employers and of any companies on whose premises the Plaintiff worked;
11. Any person identified in any party or former parties' answers to discovery or deposition;
12. Any and all parties or dismissed parties to this litigation;
13. Any representatives and/or records custodians of all co-defendants;

14. Any representatives and/or records custodians for each and every physician, hospital and health care provider for the Plaintiff;
15. Any representatives and/or records custodians of the Internal Revenue Service regarding records with information about the Plaintiff;
16. Any representatives and/or records custodians of the Social Security Administration regarding records with information about the Plaintiff;
17. Any representatives and/or records custodians of any accident, health, life and/or disability carrier for the Plaintiff regarding records with information about the Plaintiff;
18. Representatives and/or records custodians of the Worker's Compensation Fund regarding any records with information about the Plaintiff;
19. Any family members, friends or relatives of the Plaintiff;
20. Any and all physicians, nurses and other medical personnel referenced in any of the Plaintiff's medical records;
21. Any person needed for the authentication of any documents, medical records or other evidence;
22. Any fact and/or expert witness necessary for rebuttal;
23. Any other witness necessary to publish demonstrative evidence to the jury;
24. Any employees or former employees of customers of Thompson-Hayward Chemical Corporation ("THCC"), up to and including 1981, that may have purchased Carey Canadian chrysotile asbestos through THCC, products of which were allegedly used by the Plaintiff or to which the Plaintiff claims exposure;
25. THAN reserves the right to use any exhibit introduced by any party to this action or to comment upon any items prepared for use or used for demonstrative purposes by any

witness including, but not limited to, blow-ups, enlargements of documents, x-rays, pathology slides, photographs or photomicrographs. THAN further reserves its right to call each witness listed in THAN's list of witnesses to testify about or comment on any exhibit introduced as evidence or any items prepared for use or used for demonstrative purposes by any witness;

26. THAN reserves the right to call any physician or other medical practitioner who has examined the Plaintiff, including physicians who may have conducted independent medical examinations on the Plaintiff, or who may have conducted independent reviews of medical records, x-rays and pathology, as may be appropriate;

27. THAN reserves the right to call any and all economists or other financial experts identified by any party to this action including any economist named by any dismissed party;

28. THAN further reserves the right to substitute an expert witness or fact witnesses in the event the witness(es) named herein are unable to appear at trial;

29. THAN reserves the right to amend this list of witnesses. If other witnesses to be called at trial become known, their names, address and subject of their testimony will be reported to opposing counsel in writing as soon as they know; this does not apply to rebuttal or impeachment witnesses;

30. THAN specifically notes that plaintiffs, cross-plaintiffs and third-party plaintiffs have not identified any expert witness(es) who may testify as to theories and contentions specifically directed to THAN or any THAN product(s) at issue. If such identification is made, THAN may choose to amend or supplement its designation of witnesses, and may also do so in view of any designation by other parties;

31. THAN also reserves the right to identify later additional witnesses to testify about punitive damages, if punitive damages become an issue at trial;

32. THAN disclaims any duty to introduce any of the below witnesses at trial by virtue of placing them on the list;

33. THAN reserves its right to elicit any expert opinion or lay opinion testimony at the time of trial which would be truthful, which would be of benefit to the jury to determine material issues of fact, and which would not violate an existing Court Order or the New York Rules of Civil Procedure;

34. THAN hereby designates, as adverse parties, potentially adverse parties, and/or as witnesses associated with adverse parties, the plaintiffs and the cross-plaintiffs to this suit and all experts designated by any of them, even if the designation party is not a party to the suit at the time of trial;

35. In the event a present party designates an expert but then is dismissed for any reason from the suit or fails to call any designated expert, THAN reserves the right to designate and/or call any such experts previously designated by any party;

36. THAN reserves whatever additional rights it might have with regard to experts pursuant to the New York Civil Practice Law and Rules, the case law construing same, and the rulings of the trial court.

Subject to these express reservations, and based upon the limited information available at this time, THAN designates the following fact and/or expert witnesses whom it reasonably anticipates may testify, live or by prior deposition, according to availability, at the time of trial:

1. **Dr. J. LeRoy Balzer**
Walnut Creek, CA

Dr. J. LeRoy Balzer is an expert in the area of industrial hygiene. Dr. Balzer was a Certified Industrial Hygienist from 1973 until 1987 when he became an Assistant Vice Chancellor at the University of California Health Sciences Campus in San Francisco. He has lectured on occupational/environmental health issues in the United States and internationally. In

1993, Dr. Balzer became a full time consulting industrial hygienist and was appointed an Assistant Clinical Professor, School of Medicine, University of California Health Sciences. Dr. Balzer is a member of the American Conference of Governmental Industrial Hygienists (Affiliate), American Industrial Hygiene Association and other professional organizations. Dr. Balzer has been involved in the study of asbestos since approximately 1965. He has studied asbestos in the working environment and he has studied exposures to asbestos by primary and secondary users.

Dr. Balzer may testify regarding his knowledge and role in the development of sampling techniques of ambient air by transmission electron microscopy and phase contrast microscopy. He may testify concerning his participation in the development of sampling methods from the former particle counting methods to the present fiber counting methods with the United States

Public Health and Services. Dr. Balzer may testify regarding the principles of industrial hygiene as they relate to occupational and non-occupational exposure to asbestos-containing products at locations where the plaintiff(s) claims exposure to asbestos-containing products. Dr. Balzer may also offer testimony concerning his evaluation of asbestos-containing products for purposes of defining probable occupational and non-occupational exposures. Dr. Balzer may testify concerning the geological significance of fibrous material and the behavior of fibrous material in the environment.

Dr. Balzer may offer testimony concerning industrial hygiene in general and, in particular, industrial hygiene practices with respect to asbestos exposures in specific industries. He may also testify concerning the development and use of threshold limit values and the promulgation of regulations, both on a state and federal level, concerning the use of asbestos and asbestos exposures in occupational settings, the development of industrial hygiene procedures and technology and the role and impact of various studies, standards, regulations, reports and commentaries. He may also offer testimony concerning air monitoring/air testing in general, and in particular, air monitoring for levels of asbestos present in various occupational settings. He may also testify concerning state of the art technical and scientific knowledge with respect to asbestos, asbestos exposures and related industrial hygiene practices. Dr. Balzer may testify concerning the state of knowledge of his field, including the development of standards and regulations applicable to asbestos and other materials. Dr. Balzer may rely upon information from the State Geological Survey, and from studies of outdoor air monitoring levels throughout the United States. Dr. Balzer may also use prior published reports on occupational and non-occupational household exposures.

Dr. Balzer will base his testimony on his education, experience, research and review of relevant scientific and technical literature concerning the above topics, including but not limited to the material and information previously noted. Dr. Balzer may also testify to any and all other matters, within his knowledge and expertise, which are relevant to this particular case.

2. Robert Bruce, M.D.
St. Louis, MO

Dr. Bruce may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether the plaintiff(s) are at an increased risk of developing cancer, whether plaintiff has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

3. Phillip Cagle, M.D.
Houston, TX

Dr. Cagle is a pathologist. He may be offered as an expert physician, with particular expertise in pathology, in the process of carcinogenesis, as a researcher in the field of asbestos-related conditions and their etiology, in the pathologic diagnosis and grading of non-malignant conditions associated with exposure of certain populations to asbestos-containing products and/or materials, and in the epidemiologic and etiologic aspects of certain cancers that are alleged to be causally associated with exposure of certain populations to asbestos containing products and/or materials.

Dr. Cagle may provide testimony concerning the anatomic structure and functioning of the lung from a pathologic perspective, the defense mechanism and functioning of the lung in health and otherwise, the responses of the lung to various stimuli, and the role of various components of the respiratory system in the proper functioning of the lung. Dr. Cagle may describe and distinguish various types of asbestos fibers; to describe the things which affect the ability of asbestos fibers to affect various structures within the respiratory system; and to describe the body's specific responses to fibers of asbestos that are inhaled, whether or not they are retained.

Dr. Cagle may define and distinguish various conditions, such as asbestosis, pleural changes and other non-malignant changes that may be attributable in some persons to the results of long-term inhalation and retention of some forms of asbestos fiber. Dr. Cagle may testify concerning the circumstances under which exposure to certain forms and types of asbestos may be associated with the incidence of some forms of mesothelioma in some persons, and will testify concerning the results of his own experiences, the medical and scientific literature, and existing epidemiologic studies concerning associations that are alleged to exist epidemiologically between exposure to asbestos in some populations and the mortality and/or incidence of some forms of cancer.

Dr. Cagle may offer testimony concerning the effects of inhaled tobacco smoke and other factors on the occurrence of disease in populations who are also alleged to be exposed to asbestos-containing products, and additionally concerning how the effects of inhaled tobacco smoke and other factors can confound the apparent results of certain epidemiologic studies.

Dr. Cagle may testify that it cannot be said, to a reasonable degree of medical probability, that any hypothetical person's alleged "exposure" to products that may have contained asbestos was of importance to that individual, without reference to that specific person's individual work history, medical history, findings on physical examination and pathological examination of tissue, if any, information concerning the individual's use of protective equipment, specific types of asbestos-containing product(s) used and/or handled, resolution of questions regarding exposures to substances other than asbestos-containing products, and other known etiologies for whatever conditions are found to exist.

Dr. Cagle's testimony will generally respond to the pathologic, scientific and epidemiologic testimony which may be offered by plaintiff's experts, and in that sense his testimony is dependent upon the prior testimony of such experts and cannot be specifically predicted.

In expressing his opinions, Dr. Cagle will rely on his own training, education, experience, research and publications, as well as the published medical and scientific literature that has been available to him over his career.

Additionally, Dr. Cagle may testify concerning the diagnosis of the plaintiff(s). Dr. Cagle may also testify as to his findings and diagnosis after examination and analysis of tissue, slides or other pathologic materials, medical records, reports, radiographs and plaintiff's work history. He may give testimony concerning his review of any report purported to be diagnostic of any oncological conditions and the methods of and procedures for conducting fiber counts. He may give testimony regarding malignancies associated with asbestos exposure or cigarette abuse and other malignancies from which they must be differentiated, the appropriate protocols for diagnosis of those conditions, prognosis and information relating to the known causes of those malignancies. He may testify concerning the texts and other literature relevant to any malignancy purported to be asbestos-related and any other malignancy from which it must be distinguished, including data relevant to contentions of increased risk of asbestos-related disease or cancer, prognosis, the relevant standards of care and considerations relating to medical monitoring. His testimony may include discussion of any relevant epidemiology, anatomy and physiology.

4. **Paul Carlson, CIH**
Milwaukie, OR 97222

Mr. Carlson is a certified industrial hygienist and the principal of Paul Carlson Associates, Inc. Mr. Carlson may be called to testify as an expert in the field of industrial hygiene. Mr. Carlson's curriculum vitae will be provided upon request by counsel.

Mr. Carlson has an extensive background in the prevention of adverse health effects and injuries in the workplace by evaluating the workplace for potential hazards with regard to work practices and workplace design; measuring and evaluating various substances to assess exposure, exposure potential and health and safety risks; and controlling the occupational setting with engineering, work practice, administrative, and personal protection equipment. Mr. Carlson may testify as to the level of knowledge with respect to the hazards of asbestos in the field of industrial hygiene over time. He may also testify regarding the level and evolution of knowledge

in general regarding the release of asbestos fibers from certain products, and the effects of asbestos exposure and its control. He may also testify as to the development and utility of methodologies for identifying and measuring asbestos in air, dust and products, as well as the evolution of threshold limit values, the OSHA PELs, and other occupational exposure limits for asbestos promulgated by government and private organizations.

Mr. Carlson may testify about the principles of industrial hygiene and the factors that are important to industrial hygiene studies. He may testify as to the manner in which experts can use industrial hygiene data and how the data should be interpreted in specific cases. Mr. Carlson may testify as to the manner in which industrial hygiene data should be considered in evaluating exposures.

Mr. Carlson may evaluate and quantify the alleged exposures to asbestos claimed by plaintiff in this case based upon the testimony presented and his knowledge of workplace exposures from his own experience and information available in the scientific literature.

Mr. Carlson may discuss and testify about levels of asbestos exposure experienced in various occupations and trades, fiber emitting propensities of products, factors affecting levels of exposure, and industrial hygiene practices.

Mr. Carlson may also comment about and/or respond to expert testimony, opinion or testing offered on behalf of plaintiffs, as well as asbestos exposures relating to or described by plaintiffs in this case.

5. **Dr. Bruce W. Case**
Montreal, Quebec, Canada

Dr. Bruce Case is a pathologist. Dr. Case may testify as to the general medical aspects of the diagnosis and treatment of asbestos-related disease and the pathological effects of asbestos on the lung. He may also testify as to the relationship of asbestos exposure and the incidence of conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung or other cancer and mesothelioma. Dr. Case may testify that "asbestos" is a generic term for a group of naturally occurring fibrous minerals. Dr. Case may testify that there are two major groups of asbestos, serpentine and amphiboles, which have different physical forms and clearance rates after deposition in human lungs. Dr. Case may testify that the serpentine group contains one form of asbestos, chrysotile, and that the amphibole group contains several forms of asbestos, including crocidolite, amosite, tremolite, actinolite, and anthophyllite. Dr. Case may testify regarding the differing potential of these various forms of asbestos to cause conditions alleged by the plaintiff(s). Dr. Case may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers play in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Case may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Case may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s). Dr. Case may testify regarding the evidence that tremolite contamination (or other exposure to amphibole asbestos) explains the incidence of certain asbestos-related disease among individuals exposed to chrysotile asbestos.

Dr. Case may also testify regarding the diagnosis of any purportedly asbestos-related disease or condition alleged by the plaintiff(s) and respond to testimony by any of plaintiff's experts regarding the same. Dr. Case may testify as to the pathological diagnosis of asbestosis, lung cancer and mesothelioma, and the association between asbestos and the alleged disease process involving the plaintiff(s). In cases where sufficient lung tissue is available, he may also testify as to the burden of asbestos (including the various types) in plaintiff's tissues and its contribution, if any, in causing plaintiff's allegedly asbestos related disease.

Dr. Case may also testify about past and current epidemiological studies concerning the health effects of asbestos, the exposure response relationship with respect to various levels of exposures to asbestos and the various asbestos-related diseases, the health effects of ambient air exposure to asbestos, and the propensity (if any) of the different asbestos fiber types to cause asbestos-related diseases. Dr. Case may also testify regarding other probable or possible causes of any disease or condition alleged by the plaintiff(s), including but not limited to, smoking where relevant.

6. **Dr. Andrew Churg**
Vancouver, B.C., Canada

Dr. Churg is a pathologist at the University of British Columbia. He may testify concerning the physiological and radiological aspects of asbestos-related lung disease, including etiology, diagnosis, treatment, prognosis and epidemiology; the causes of lung cancer; the history of the medical science concerning knowledge and understanding of asbestos and asbestos-related disease; fiber types, dose/response and threshold levels needed to produce disease; the relationship of asbestos exposure to other environmental factors and their comparative risks.

Dr. Churg may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon persons in occupational settings, including the epidemiology of asbestos-related diseases and the criteria for diagnosis of an asbestos-related disease. He may also testify regarding the existence or non-existence of any asbestos-related disease in the plaintiff(s), including but not limited to pleural plaques, asbestosis, lung or other cancer, and mesothelioma. He may also testify as to his findings and diagnosis after examination and analysis of tissue, slides or other pathologic materials, medical records, reports, radiographs and plaintiff's work history. He may give testimony concerning his review of any report purported to be diagnostic of any oncological or asbestos-related condition in plaintiff(s) and the methods of and procedures for conducting fiber counts. He may also testify on the existence of a dose response relationship between exposure to asbestos and asbestos-related disease. He may also testify on increased risk of cancer issues and whether a particular plaintiff has a reasonable fear of cancer due to exposure to asbestos. He may also testify on the health consequences of smoking.

In addition, Dr. Churg may testify regarding general medical issues, including but not limited to the following: anatomy and function of the respiratory and circulatory systems and the diagnosis and treatment of disease affecting such systems; the nature of asbestos and its effect on the body when inhaled and ingested, and asbestosis; the symptomatology, disease process, and

diagnosis of asbestosis and cancer associated with the respiratory system, peritoneum and peritoneal cavity; the nature and extent of medical and scientific knowledge regarding any association of obstructive pulmonary disease with asbestos fiber exposure; the effect of exposure to substances other than asbestos on the development and manifestation of obstructive and restrictive conditions and diseases of the respiratory system and other causes of obstructive and restrictive disease or defects of the respiratory system; methods of diagnosis of various diseases, particularly means of establishing the differential diagnosis of alleged asbestos-related diseases with other non-asbestos-related diseases; incidence of lung cancer among individuals with asbestosis compared with non-asbestotic asbestos-exposed workers, non-asbestos exposed workers, and with the general population; the import of any exhibit (including without limitation, corporate documents of defendants) introduced as evidence, or any items prepared for use or used for demonstrative purposes by any witness; cigarette smoking and its effect on the lung and other organs; the relationship between cigarette smoking and cancer of the lung and cancers of other sites with reference to epidemiological studies and physiologic effect; the differences between impairment and disability; effect of asbestosis, or asbestos exposure without asbestosis, on disability and life expectancy; effect of pleural plaques or other pleural manifestations of asbestos exposure on lung function or life expectancy; the lack of a relationship between presence of pleural plaques and a later development of any form of cancer; cancer incidence in the general population and among asbestos workers and its potential causes; the history of evolution and knowledge of asbestos-related diseases; the fiber types and the exposure levels considered substantial in causing asbestos-related disease.

Dr. Churg may testify as to the ability of various types of asbestos fibers to cause disease and the properties of fibers that are believed to be necessary in order to cause disease. Dr. Churg may testify that the literature and state of knowledge regarding the etiology of asbestos-related diseases, including epidemiological data, does not support a causal relationship between exposure to low levels of chrysotile asbestos and the development of asbestos-related diseases. Dr. Churg also may testify that low levels of exposure would not be a contributing factor with other exposures in causing disease.

Dr. Churg may testify generally that some asbestos-containing products, especially products that do not release significant quantities of respirable asbestos fibers, do not create a health hazard and that exposure to these products does not play a role in the genesis of any asbestos-related disease.

7. **Thomas Colby, M.D.**
Rochester, MN

Dr. Colby may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether plaintiff(s) is at an increased risk of developing cancer, whether plaintiff(s) has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

8. James Coulter, M.D.
Springfield, MO

Dr. Coulter may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether plaintiff(s) is at an increased risk of developing cancer, whether plaintiff(s) has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

9. Morton Corn, Ph.D.
Queenstown, MD

Dr. Corn is an experienced certified industrial hygienist with extensive background in the prevention of adverse health effects and injuries in the workplace by evaluating the workplace for potential hazards with regard to work practices and workplace design; measuring and evaluating various substances to assess exposure, exposure potential and health and safety risks; and controlling the occupational setting with engineering, work practice, administrative, and personal protective equipment methods. Dr. Corn may testify as to the level of knowledge with respect to the hazards of asbestos in the field of industrial hygiene over time. He may also testify regarding the level and evolution of knowledge in general regarding the release of asbestos fibers from certain products, and the effects of asbestos exposure and its control. He may also testify as to the development and utility of methodologies for identifying and measuring asbestos in air, dust and products, as well as the evolution of threshold limit values, the OSHA PELs, and other occupational exposure limits for asbestos promulgated by government and private organizations. Dr. Corn may discuss the relationship between scientific knowledge and the development of public policy and standards relating to asbestos exposure, and all aspects of government regulation of asbestos exposure. Dr. Corn may testify about the development of knowledge regarding the dose-response relationship between exposure to asbestos and disease, and other related matters.

Dr. Corn may testify about the principles of industrial hygiene and the factors that are important to industrial hygiene studies. He may testify as to the manner in which experts can use industrial hygiene data and how the data should be interpreted in specific cases. Dr. Corn may testify as to the manner in which industrial hygiene data should be considered in evaluating exposures.

He may discuss and testify about levels of asbestos exposure experienced in various occupations and trades, fiber emitting propensities of products, factors affecting levels of exposure, and industrial hygiene practices. Dr. Corn may base his opinions regarding use of asbestos-containing products on various fiber release studies performed at industrial hygiene laboratories.

Dr. Corn may comment about and/or respond to expert testimony or opinion offered on

behalf of plaintiff(s), including but not limited to testimony, if any, regarding the evolution of knowledge of the effects of asbestos exposure and standards and regulations applicable to asbestos exposure. He may also testify regarding any testing done by or on behalf of plaintiff(s), including, but not limited to, test methodologies and analytical methods. Dr. Corn may also comment upon or analyze asbestos exposures relating to or described by plaintiff(s) or co-workers in this case.

10. **John E. Craighead, M.D.**
Ferrisburgh, VT

Dr. Craighead is a pulmonary pathologist. He may be offered as an expert physician, with particular regard to the pathologic diagnosis and grading of non-malignant conditions associated with exposure of certain populations to asbestos-containing products and/or materials, and the epidemiologic and etiologic aspects of certain cancers that are alleged to be causally associated with exposure of certain populations to asbestos-containing products and/or materials.

Dr. Craighead may provide testimony concerning the anatomic structure and functioning of the lung from a pathologic perspective, the defense mechanisms and functioning of the lung in health and otherwise, the responses of the lung to various stimuli, and the role of various components of the respiratory system in the proper functioning of the lung. Dr. Craighead may describe and distinguish various types of asbestos fibers; to describe the things which affect the ability of asbestos fibers to affect various structures within the respiratory system; and to describe the body's specific responses to fibers of asbestos that are inhaled, whether or not they are retained. Dr. Craighead may testify regarding the differing potential of these various forms of asbestos to cause conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung cancer and mesothelioma. Dr. Craighead may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers plays in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Craighead may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Craighead may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s). Dr. Craighead may testify regarding the evidence that tremolite contamination (or other exposure to amphibole asbestos) explains the incidence of certain asbestos-related disease among individuals exposed to chrysotile asbestos. Dr. Craighead may testify by hypothetical question as to concepts such as latency and injury.

Dr. Craighead may define and distinguish various conditions, such as asbestosis, pleural changes and other non-malignant changes that may be attributable in some persons to the results of long term inhalation and retention of some forms of asbestos fiber. Dr. Craighead may also testify concerning the circumstances under which exposure to certain forms and types of asbestos may be associated with the incidence of some forms of mesothelioma in some persons, and may testify concerning the results of his own experiences, the medical and scientific literature, and existing epidemiologic studies concerning associations that are alleged to exist epidemiologically between exposure to asbestos in some populations and the mortality and/or incidence of some forms of cancer.

Dr. Craighead may offer testimony concerning the effects of inhaled tobacco smoke and other factors on the occurrence of disease in populations who are also alleged to be exposed to asbestos containing products.

Dr. Craighead may also testify that it cannot be said, to a reasonable degree of medical probability, that any hypothetical person's alleged exposure to products that may have contained asbestos was of importance to that individual, without reference to that specific person's individual work history, habits including use of tobacco and other things, family background, medical history, findings on physical examination and pathological examination of tissue, if any, information concerning the individual's use of protective equipment, specific types of asbestos-containing product(s) used and/or handled, resolution of questions regarding exposures to substances other than asbestos-containing products, and other known etiologies for whatever conditions are found to exist. Without addressing factors of individual response and circumstances, and without viewing the individual in the specific circumstances, it is not possible to generalize that any particular product was or is defective, if one defines defectiveness medically or scientifically to mean that a particular product caused or was capable of causing a disease or condition in a particular individual.

Dr. Craighead will base his opinions on his own research, knowledge and experience, his background and education, his writings, his review of the medical and scientific literature, including epidemiologic and other research on asbestos and conditions associated with asbestos, and other relevant publications and materials. Although Dr. Craighead is familiar with many governmental regulatory writings, these are to be distinguished from medical or scientific literature.

It is further expected that Dr. Craighead's testimony will generally respond to the pathologic, scientific and epidemiologic testimony that may be offered by plaintiff's experts, and in that sense his testimony is dependent upon the prior testimony of such experts and cannot be specifically predicted.

11. **Dr. James D. Crapo**
Englewood, CO

Dr. Crapo is board certified in internal medicine with a subspecialty certification in pulmonary diseases. Dr. Crapo practices medicine at the National Jewish Medical Center in Denver, Colorado.

Dr. Crapo may testify as to general medical issues and physiology. Dr. Crapo may testify about the pulmonary aspects of asbestos exposure, including matters such as dose response, pathogenicity, carcinogenicity, and the potential for asbestos-related disease as a result of exposures to the different types of fibers and different levels of exposure to asbestos fibers. Dr. Crapo may testify regarding the differing potential of the various forms of asbestos to cause conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung cancer and mesothelioma. Dr. Crapo may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers plays in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Crapo may testify generally regarding the role of

dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Crapo may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s).

Dr. Crapo may testify about alleged occupational exposure as described by plaintiff(s) and whether such exposure could be considered a substantial contributing factor to plaintiff's alleged disease. Dr. Crapo may discuss the risks associated with exposures to different types of asbestos fibers and whether such exposures were a substantial contributing factor to plaintiff's alleged disease. Dr. Crapo may comment upon the fiber burden results in this case, if any. Dr. Crapo may also testify regarding the diagnosis of any purportedly asbestos-related disease or condition alleged by the plaintiff(s) and respond to testimony by any of plaintiff's experts regarding the same. Dr. Crapo may also testify regarding other probable or possible causes of any disease or condition alleged by the plaintiff(s), including but not limited to, smoking where relevant.

Dr. Crapo may testify concerning plaintiff's medical condition, whether the plaintiff is suffering from an asbestos-related disease, cigarette smoking and lung disease, and generally about the pulmonary system and its functions as well as conditions and diseases of the pulmonary system. He may also testify as to his findings and diagnosis after examination and analysis of tissue, slides or other pathologic materials, medical records, reports, radiographs and plaintiff's work history. He may give testimony concerning his review of any report purported to be diagnostic of any oncological or asbestos-related condition in plaintiff(s). Dr. Crapo may also testify about asbestos and its effect on the pulmonary system, including the diagnosis and prognosis of asbestos-related markers and diseases, and the risks associated with developing cancers. Dr. Crapo may testify generally that some asbestos-containing products, especially products that do not release significant quantities of respirable asbestos fibers, do not create a health hazard and that exposure to these products does not play a role in the genesis of any asbestos-related disease.

Dr. Crapo may testify about the principles of epidemiology and what is involved in an epidemiologic study. He may testify that studies of particular groups or occupations of people are not necessarily applicable to other groups or occupations. Dr. Crapo may testify as to the information necessary to determine the risks for a group of people or persons contracting an asbestos-related disease, and if it is scientifically possible to attribute a disease to a particular exposure. Dr. Crapo may discuss epidemiological analysis of asbestos and how such analysis may be applied to the facts of a specific individual.

12. Harry Demopoulos, M.D.
Scarsdale, NY

Dr. Demopoulos may testify as to what and when doctors, mine owners, and manufacturers knew or should have known about the dangers of exposure to asbestos, not only to persons working in mines and manufacturing plants, but also to those coming into contact with the product, such as insulators, pipe fitters, and others working in close proximity to the installation or removal of asbestos-containing materials. He may testify as to the available knowledge or understanding of a particular disease entity at a given point in time, as well as the

knowledge or understanding of the risks or hazards of being exposed to asbestos in certain occupations or at given levels of exposure. In addition, he may testify regarding general medical issues relating to an exposure to asbestos in any individual or in a specific group of tradesmen, such as insulators, pipe fitters, etc.

13. **William Dyson, Ph.D.**
Greensboro, NC

Dr. Dyson is an industrial hygienist. Dr. Dyson may testify about industrial hygiene and threshold limit values, product testing, emissions, development of knowledge regarding asbestos exposure, product warnings, and/or dust counting equipment and techniques. Dr. Dyson may discuss the relationship between scientific knowledge and the development of public policy and standards relating to asbestos exposure, and all aspects of government regulation of asbestos release and exposure. Dr. Dyson may also testify about the development of knowledge regarding the dose-response relationship between exposure to asbestos and disease, and other related matters.

Dr. Dyson may testify about the principles of industrial hygiene and the factors that are important to industrial hygiene studies. He may testify as to the manner in which experts can use industrial hygiene data and how the data should be interpreted in specific cases. Dr. Dyson may as to the manner in which industrial hygiene data should be considered in evaluating exposures.

Dr. Dyson may testify regarding the level of asbestos dust and the types of asbestos fibers that plaintiff(s) may have been exposed to based on review of available work place documents, plaintiff's employment records and testimony, co-worker testimony, industrial hygiene surveys of work sites, and/or hypothetical facts presented at the time of trial.

Dr. Dyson may testify regarding products into which asbestos was incorporated and the ability, or lack thereof, of such products to release respirable asbestos fibers under various occupational conditions. Dr. Dyson may also testify concerning OSHA and EPA reports, statements, guidelines and regulations concerning various asbestos-containing products. Dr. Dyson may testify about the size, construction, layout and working environment of various facilities. He may testify about the nature of the working environment in such locations. Dr. Dyson may discuss the development of warnings and the development of attitudes about what should be stated in warnings.

Dr. Dyson may be provided with copies of the testing data of experts retained by counsel for plaintiff(s) and may be asked to comment on the methods used in the studies as well as the results of the studies, as compared to published studies and data reviewed by Dr. Dyson.

14. **Dr. I. Allen Feingold**
Miami, FL

Dr. Feingold is the Chief of the Division of Pulmonary Medicine at South Miami Hospital. He may testify as a state-of-the-art witness generally and with respect to asbestos-containing products. He may also testify concerning the physiological and radiological aspects

of asbestos-related lung disease, including etiology, diagnosis, treatment, prognosis and epidemiology; the causes of lung cancer, the history of the medical science concerning knowledge and understanding of asbestos and asbestos-related disease; fiber types, dose/response and threshold levels needed to produce disease, the relationship of asbestos exposure to other environmental factors and their comparative risks.

In addition, Dr. Feingold may testify about the various fiber release studies, performed at industrial hygiene laboratories, and on fiber release during the use of asbestos containing products. Dr. Feingold may testify in general concerning asbestos related diseases and the effects of exposure to asbestos upon persons in occupational settings, including the epidemiology of asbestos related diseases and the criteria for diagnosis of an asbestos related disease. He may also testify regarding the existence or non-existence of any asbestos related disease in the plaintiff(s), including, but not limited to pleural changes, asbestosis, lung cancer, mesothelioma, laryngeal cancer, esophageal cancer and stomach cancer. He may also testify on whether any asbestos related disease allegedly suffered by plaintiff(s) was medically or proximately called by exposure to asbestos containing products, and as to his findings and diagnosis after examination and analysis of tissue, slides or other pathologic materials, medical records, reports, radiographs and plaintiff's work history. He may give testimony concerning his review of any report purported to be diagnostic of any oncological or asbestos-related condition in plaintiff(s). He may also testify on a dose response relationship between exposure to asbestos and asbestos related disease. He may also testify on increased risk of cancer and whether a particular plaintiff has a reasonable fear of cancer due to exposure to asbestos. He may also testify on the health consequences of smoking.

Dr. Feingold may testify as to the ability of various types of asbestos fibers to cause disease and the properties of fibers that are believed to be necessary in order to cause disease. Dr. Feingold is expected to testify that the literature and state of knowledge regarding the etiology of asbestos-related diseases, including epidemiological data, does not support a causal relationship between exposure to low levels of chrysotile asbestos and the development of asbestos-related diseases. Dr. Feingold is expected to testify that low levels of exposure would not be a contributing factor with other exposures in causing disease.

Dr. Feingold may also testify generally that some asbestos-containing products, especially products that do not release significant quantities of respirable asbestos fibers, do not create a health hazard and that exposure to these products does not play a role in the genesis of any asbestos-related disease.

15. **Mr. Doug Fowler**
Redwood, CA

Mr. Fowler is a certified industrial hygienist. Mr. Fowler may testify about alleged occupational exposure and whether such exposure could be considered as creating a scientifically significant amount of risk for the development of an asbestos-related disease.

Mr. Fowler may testify about the principles of industrial hygiene and the factors that are important to industrial hygiene studies. He is expected to testify as to the manner in which

experts can use industrial hygiene data and how the data should be interpreted in specific cases.

Mr. Fowler may also testify as to the manner in which industrial hygiene data should be considered in evaluating exposures. Mr. Fowler may be provided with copies of the testing data of experts retained by counsel for plaintiff(s), if any, and may be asked to comment on the methods used in the studies as well as the results of the studies, as compared to published studies and work performed by Mr. Fowler in the past.

16. Allen Gibbs, M.D.
Penarth, Glamorgan, United Kingdom

Dr. Gibbs is a pulmonary pathologist. Dr. Gibbs may testify as to the general medical aspects of the diagnosis and treatment of asbestos-related disease and the pathological effects of asbestos on the lung. He may also testify as to the relationship of asbestos exposure and the incidence of conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung and other cancer and mesothelioma. Dr. Gibbs may testify that "asbestos" is a generic term for a group of naturally occurring fibrous minerals. Dr. Gibbs may testify that there are two major groups of asbestos, serpentine and amphiboles, which have different physical forms and clearance rates after deposition in human lungs. Dr. Gibbs may testify that the serpentine group contains one form of asbestos, chrysotile, and that the amphibole group contains several forms of asbestos, including crocidolite, amosite, tremolite, actinolite, and anthophyllite. Dr. Gibbs may testify regarding the differing potential of these various forms of asbestos to cause conditions alleged by the plaintiff(s). Dr. Gibbs may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers play in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Gibbs may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Gibbs may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s). Dr. Gibbs may testify regarding the evidence that tremolite contamination (or other exposure to amphibole asbestos) explains the incidence of certain asbestos-related disease among individuals exposed to chrysotile asbestos.

Dr. Gibbs may also testify regarding the diagnosis of any purportedly asbestos-related disease or condition alleged by the plaintiff(s) and respond to testimony by plaintiff's experts regarding the same. Dr. Gibbs may also testify regarding other probable or possible causes of any disease or condition alleged by the plaintiff(s), including but not limited to, smoking where relevant.

17. Michael Graham, M.D.
St. Louis, MO

Dr. Michael Graham is a board certified pathologist. Dr. Graham may testify as to the general medical aspects of the diagnosis and treatment of asbestos-related disease and the pathological effects of asbestos on the lung. He may also testify regarding the biological effects of asbestos, the evidence of the relationship between the inhalation of various forms of asbestos fibers and asbestos-associated disease, and the factors considered in evaluating whether there is any medical risk from asbestos-containing products. Dr. Graham may also provide testimony regarding animal research concerning asbestos-related disease, the biological effects of asbestos and other dusts, cancer research, the practices and protocols regarding publication of scientific research, and the history of research into such matters in the United States and elsewhere, including state of the art.

He may also testify as to the relationship of asbestos exposure and the incidence of conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung and other cancer and mesothelioma. Dr. Graham may testify that "asbestos" is a generic term for a group of naturally occurring fibrous minerals. Dr. Graham may testify that there are two major groups of asbestos, serpentine and amphiboles, which have different physical forms and clearance rates after deposition in human lungs. Dr. Graham may testify that the serpentine group contains one form of asbestos, chrysotile, and that the amphibole group contains several forms of asbestos, including crocidolite, amosite, tremolite, actinolite, and anthophyllite. Dr. Graham may testify regarding the differing potential of these various forms of asbestos to cause conditions alleged by the plaintiff(s). Dr. Graham may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers plays in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Graham may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Graham may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s). Dr. Graham may testify regarding the evidence that tremolite contamination (or other exposure to amphibole asbestos) explains the incidence of certain asbestos-related disease among individuals exposed to chrysotile asbestos.

Dr. Graham may provide testimony regarding his examination of plaintiff's medical records, work history and pathology material. Dr. Graham may also testify regarding the diagnosis of any purportedly asbestos-related disease or condition alleged by the plaintiff(s) and respond to testimony by any of plaintiff's experts regarding the same. Dr. Graham may also testify regarding other probable or possible causes of any disease or condition alleged by the plaintiff(s), including but not limited to, smoking where relevant. Dr. Graham may also be asked to respond to the testimony of certain witnesses offered at the time of trial including, but not limited to, testimony from plaintiff's experts regarding the alleged hazards of exposure to asbestos-containing materials and their alleged propensity to release fibers.

The observations and opinions offered by Dr. Graham in this matter will be based on his review of the materials provided, a continuing review of the available scientific literature relating to the health effects of materials of interest in this matter, and Dr. Graham's education and

professional experience.

18. **Dr. Russell Harley**
Charleston, SC

Dr. Harley is a pulmonary pathologist. He may provide testimony concerning the anatomic structure and functioning of the lung from a pathologies perspective, the defense mechanisms and functioning of the lung in health and otherwise, the responses of the lung to various stimuli and the role of various components of the respiratory system in the proper function of the lung. Dr. Harley may describe and distinguish various types of asbestos fibers; to describe the things which affect the ability of asbestos to affect various structures within the respiratory system; and to describe the body's specific responses to fibers of asbestos the are inhaled, whether or not they are retained.

Dr. Harley may define and distinguish various conditions, such as asbestosis, pleural changes and other non-malignant changes that may be attributable in some persons to the results of long term inhalation and retention of some forms of asbestos fiber. Dr. Harley may testify concerning the circumstances under which exposure to certain forms and types of asbestos may be associated with the incidence of some forms of mesothelioma in some persons, and testify concerning the results of his own experiences, the medical and scientific literature, and existing epidemiologic studies concerning associations that are alleged to exist epidemiologically between exposure to asbestos in some populations and the mortality and/or incidence of some forms of cancer.

Dr. Harley may also testify concerning the effects of inhaled tobacco smoke and other factors on the occurrence of disease in populations who are also alleged to be exposed to asbestos containing products, and additionally concerning how the effects of inhaled tobacco smoke and other factors can confound the apparent results of certain epidemiologic studies.

Dr. Harley may also testify that it cannot be said, to a reasonable degree of medical probability, that any hypothetical person's alleged exposure to products that may have contained asbestos was of importance to that individual, without reference to that specific person's individual work history, medical history, findings on physical examination and pathological examination of tissue, if any, information concerning the individual's use of protective equipment, specific types of asbestos contain product(s) used and/or handled, resolution of questions regarding exposures to substances other than asbestos-containing products, and other known etiologies for whatever conditions are found to exist. Dr. Harley's testimony will generally respond to the pathologic, scientific and epidemiologic testimony which may be offered by plaintiff's experts, and in that his testimony is dependent upon the prior testimony of such experts and cannot be specifically predicted. In expressing his opinions, Dr. Harley will rely on his own training, education, experience, research and publications, as well as the published medical and scientific literature that has been available to him over his career.

19. **Dan H. Heflin, Jr.**
Norfolk, VA

Dan H. Heflin, Jr. is a naval engineer. It is anticipated that Mr. Heflin will testify and offer opinions based upon his education, experience and professional training; his review of design, maintenance and other naval records of the various vessels in question; and his general knowledge concerning the maintenance and procurement procedures aboard ships.

It is anticipated that he will testify generally with regard to the drafting, promulgation and use of Military Specifications and Qualified Product Lists (collectively "military records") by the U.S. Navy and the shipbuilding industry. He may also testify regarding how military records pertaining to materials used aboard U.S. Navy vessels were drafted, approved, procured, inventoried, maintained, and issued by the Navy; and that the Navy required inspection, approval and compliance with applicable Military Specifications before any materials could be installed on the Navy vessels.

He may also testify for the purpose of authenticating Military Specifications and Qualified Products Lists relevant to products at issue in this lawsuit. His testimony may also include opinions about requirements and practices pertaining to ship design and construction in general, and/or the design and construction of the ship(s) at issue in this lawsuit. He may testify regarding identification of asbestos materials on various ships on which plaintiffs' decedent worked. He may also testify and offer opinions about shipbuilding and procurement practices and policies at shipyards in general and/or at specific shipyards, which may be at issue in this lawsuit. He may testify about practices and procedures, including all written documentation, used by Navy personnel to inspect, maintain, repair and overhaul U.S. Navy vessels.

20. **Thomas Howard, M.D.**
Melbourne, FL

Dr. Howard may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether plaintiff(s) is at an increased risk of developing cancer, whether plaintiff(s) has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

21. **William Hughson, Ph.D.**
San Diego, CA

Dr. Hughson is board certified in pulmonology, internal medicine and occupational medicine. Dr. Hughson also is an epidemiologist.

Dr. Hughson may testify as to the general medical aspects of the diagnosis and treatment of asbestos-related disease and the pathological effects of asbestos on the lung. He may also testify as to the relationship of asbestos exposure and the incidence of conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung and other cancer and mesothelioma. Dr.

Hughson may testify regarding the differing potential of the various forms of asbestos to cause conditions alleged by the plaintiff(s). Dr. Hughson may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers plays in their ability, or lack thereof, to cause conditions alleged by plaintiff(s).

Dr. Hughson may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions alleged by plaintiff(s). Dr. Hughson may testify generally regarding the latency periods associated with asbestos-related conditions alleged by plaintiff(s). Dr. Hughson may testify regarding the evidence that tremolite contamination (or other exposure to amphibole asbestos) explains the incidence of certain asbestos-related disease among individuals exposed to chrysotile asbestos.

Dr. Hughson may testify that most experts point to the paper by Wagner in 1960 as the first medical article that linked asbestos exposure to mesothelioma. The exposures described in the article detail the types of exposure that were sufficient to cause mesothelioma. The Wagner article dealt with exposure to crocidolite, not amosite or chrysotile.

The issue of whether mesothelioma was a problem in North American was raised by Selikoff in 1965. Non-occupational exposures (specifically domestic exposure) as a cause of mesothelioma in the United States was not raised until the mid-1970's.

Dr. Hughson may testify about certain products in that he has reviewed information and studies regarding exposure levels experienced with certain work practices used with asbestos-containing products, and is familiar with the literature concerning low level exposures. Low level exposures that might be expected from exposure to or use of certain products, in most instances, are not a substantial contributing factor to asbestos-related disease.

Dr. Hughson may testify about the principles of epidemiology and what is involved in an epidemiologic study. He may testify that studies of particular groups or occupations of people are not necessarily applicable to other groups or occupations. Dr. Hughson may testify as to the information necessary to determine the risks for a group of people or persons contracting an asbestos-related disease, and if it is scientifically possible to attribute a disease to a particular exposure. Dr. Hughson may discuss epidemiological analysis of asbestos and how such analysis may be applied to the facts of a specific individual.

Dr. Hughson may also testify regarding the diagnosis of any purportedly asbestos-related disease or condition alleged by the plaintiff(s) and respond to testimony of plaintiff's experts regarding the same. Dr. Hughson may also testify regarding other probable or possible causes of any disease or condition alleged by the plaintiff(s), including but not limited to, smoking where relevant.

22. **Dr. Robert Jones**
New Orleans, LA

Dr. Jones is a pulmonologist who is currently a staff physician at Tulane Medical Center Hospital and a Professor of Medicine at Tulane University School of Medicine in New Orleans,

Louisiana.

Dr. Jones may testify generally about the pulmonary system and its functions as well as conditions and diseases of the pulmonary system. He may also testify concerning plaintiff's medical condition. Dr. Jones may also testify about asbestos and its effect on the pulmonary system, including the diagnosis and prognosis of asbestos-related markers and diseases, the risks associated with developing cancers, cigarette smoking, and lung disease. Dr. Jones may also testify about any matter raised by experts called by the plaintiff(s) or co-defendants including, but not limited to, plaintiff's medical condition, the state of medical knowledge concerning asbestos, asbestos-related disease and other occupational diseases.

23. **Gerald Kerby, M.D.**
Kansas City, KS

Dr. Kerby may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether plaintiff(s) is at an increased risk of developing cancer, whether plaintiff(s) has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

Dr. Kerby may testify as to what and when doctors, mine owners, and manufacturers knew or should have known about the dangers of exposure to asbestos, not only to persons working in mines and manufacturing plants, but also to those coming into contact with the product, such as insulators, pipe fitters, and others working in close proximity to the installation or removal of asbestos-containing materials. He may testify as to the available knowledge or understanding of a particular disease entity at a given point in time, as well as the knowledge or understanding of the risks or hazards of being exposed to asbestos in certain occupations or at given levels of exposure. In addition, he may testify regarding general medical issues relating to an exposure to asbestos in any individual or in a specific group of tradesmen, such as insulators, pipe fitters, etc.

24. **Arthur M. Langer, Ph.D.**
Brooklyn, NY

Dr. Langer is a mineralogist with a Ph.D. from Columbia University. Dr. Langer is a Professor of mineralogy at City University, New York, New York, and a director of the Environmental Sciences Laboratory of the Institute of Applied Sciences, Brooklyn College of the City University of New York.

Dr. Langer may identify and describe the various methods by which inorganic material, from aerosols, bulk samples, or tissue, may be analyzed chemically, crystallographically, and structurally. Dr. Langer may testify about the various types of asbestos fibers, the geographic locations where the fibers can be found, the potency of the various fibers in the human lung (including inorganic toxicity), the physical and chemical characteristics of the various asbestos fibers, and the identification and characterization of asbestos fibers.

Dr. Langer may testify as to the types of inorganic minerals found in the lung tissue of persons with malignant mesothelioma and which are associated the incidence of malignant mesothelioma in humans. Dr. Langer may identify the types of fiber that have been shown to create an increased risk for malignant mesothelioma. Dr. Langer may testify as to the physical and chemical characteristics of the fibers that have been shown to create an increased risk of malignant mesothelioma.

Dr. Langer also may testify as to the potential for certain finished asbestos-containing products to be contaminated with inorganic minerals and the amounts of the types of trace contaminants that may be found in the products. Dr. Langer may offer testimony as to the amount of contaminants that are found in finished asbestos-containing products, if any, and the chemical, crystallographic, and structural composition of the contaminants. Dr. Langer may testify as to the levels of airborne contaminants that can be generated from a finished product, if any.

Dr. Langer may testify, based upon his review of the literature and of plaintiff's evidence of exposure, that exposure to certain products did not result in a release of any contaminants sufficient to cause disease in persons such as plaintiff(s). Dr. Langer may testify that his work, and the literature, do not establish that certain products are contaminated with tremolite asbestos.

25. **Dr. Richard J. Lee**
Monroeville, PA

Dr. Lee is an expert microscopist and holds a Ph.D. in Theoretical Solid State Physics. He specializes in characterization of materials including asbestos, estimates of exposure, determination of the quantity and type of materials in various products and a number of other areas. He has been involved in the development and application of quantitative computer-controlled electron microscopy techniques. He pioneered the use of quantitative electron diffraction techniques for the identification of asbestos. He has experience in the development of automated techniques for combined x-ray microanalysis and electron microscopy. He has been involved in the development of automated electron diffraction pattern analysis techniques and application to environmental problems, asbestos analysis, coal mineral characterization, and quantitative metallography.

Dr. Lee may testify regarding the development and use of scientific knowledge and techniques regarding the collection, identification, measurement, and analysis of airborne asbestos fibers including the history and current methodologies for electron microscopy. He may also testify about the governmental and industrial standards, past and present, for airborne asbestos and the standards and methods used for air sampling and sample preparation, including the direct and indirect methods. In addition, Dr. Lee may comment on and/or respond to expert testimony or opinion offered on behalf of plaintiff(s), including, but not limited to, testimony and/or reports (if any) regarding testing relating to potential asbestos exposure done by or on behalf of plaintiff(s), test methodologies, and analytical methods.

26. **James E. Lockey, M.D.**
Cincinnati, OH

Dr. Lockey may testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases. Furthermore, he may testify whether plaintiff(s) is at an increased risk of developing cancer, whether plaintiff(s) has a reasonable fear of cancer due to exposure to asbestos, as well as the prognosis of each of these persons. In addition, he may also testify regarding the consequences of the inhalation of tobacco smoke.

27. **Terence C. Moisan, M.D.**
Orland Park, IL

With respect to the Plaintiff, Dr. Moisan may testify regarding his review and interpretation of x-ray films, review and interpretation of pulmonary function testing, review and interpretation of medical histories and medical records review, and interpretation of pathological materials, the nature and extent of any impairment or disability of Plaintiff, and the presence of any other diseases or conditions from which the Plaintiff suffered.

Dr. Moisan may also be expected to testify, in general, concerning asbestos-related diseases and the effects of exposure to asbestos upon a person or persons in general, including the epidemiology of asbestos-related diseases.

Furthermore, Dr. Moisan may be expected to testify whether a particular Plaintiff or group of Plaintiffs is at an increased risk of developing cancer, whether a Plaintiff has a reasonable fear of cancer due to his exposure to asbestos, as well as the prognosis of each of these persons. In addition, Dr. Moisan may also testify regarding the consequences of the inhalation of tobacco smoke.

28. **Dr. Tim Oury**
Pittsburgh, PA

Dr. Tim Oury is a pathologist. Dr. Oury may testify as to the general medical aspects of the diagnosis and treatment of asbestos-related disease and the pathological effects of asbestos on the lung. He may also testify as to the relationship of asbestos exposure and the incidence of conditions alleged by the plaintiff(s), including pleural plaques, asbestosis, lung and other cancer and mesothelioma. Dr. Oury may testify that "asbestos" is a generic term for a group of naturally occurring fibrous minerals. Dr. Oury may testify that there are two major groups of asbestos, serpentine and amphiboles, which have different physical forms and clearance rates after deposition in human lungs. Dr. Oury may testify that the serpentine group contains one form of asbestos, chrysotile, and that the amphibole group contains several forms of asbestos, including crocidolite, amosite, tremolite, actinolite, and anthophyllite. Dr. Oury may testify regarding the differing potential of these various forms of asbestos to cause conditions alleged by the plaintiff(s). Dr. Oury may testify generally regarding the role that the size, structure and chemical composition of different types of asbestos fibers plays in their ability, or lack thereof, to cause conditions alleged by plaintiff(s). Dr. Oury may testify generally regarding the role of dose in determining whether certain types of asbestos fibers can cause or contribute to conditions